

REMARKS

Claims 1-5 and 8 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by WO 02/17313 A1 to Hulin et al. Claim 9 is rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Hulin et al. in view of U.S. Patent No. 5,270,445 to Hou. Claims 11-15 are rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over JP 2001-329226 to Yoshiki in view of JP 56-141367 to Shizuo et al.. Also, claim 15 has been rejected by the Examiner under 35 U.S.C. § 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. These rejections are respectfully traversed.

The present invention is directed to a powder metallic coating material comprising a flake pigment and a resin powder which exhibits a high coating brightness, and an excellent substrate hiding property, an effective introduction ratio and a substantial elimination of coating spit formation of the metallic coating material. According to the present invention, the above advantageous results can be achieved by establishing the relationship between the charged value of the flake pigment and the charged value of the resin powder which is defined by the following relationships:

$$|C_R - C_A| \leq 10 \quad \bullet \bullet \bullet (1)$$

$$10 \leq |C_A| \leq 40 \quad \bullet \bullet \bullet (2)$$

where C_A denotes the charge value ($\mu\text{C/g}$) of said flake pigment and C_R denotes the charge value ($\mu\text{C/g}$) of said resin powder.

As can readily be seen by referring to Table 2 of the present application, when $C_R - C_A$ ($\mu\text{C/g}$) is equal to or less than 10 as shown in Examples 1 to 5 of the present application, a very effective introduction ratio (%), a high coating brightness (β/α) a substantial elimination of coating spit formation and an excellent substrate hiding property can be achieved. This is to be compared with Comparative Examples 1 and 2 as shown in Table 2 of the present application,

where it can be readily seen that when $C_R - C_A$ is greater than 10, that is 15.8 and 15.4, respectively, all of the parameters referred to hereinabove, that is, the introduction ratio, the coating brightness, the spit formation and the substrate hiding property were substantially inferior to the present invention. Thus, claim 1 of the present application defines a specific relationship with respect to the charge control agent coated on the surface of the base particle and the charge value of the resin powder which is effective in achieving the Applicant's inventive contribution.

As can be noted by referring to page 5 of the present application, the present invention provides a flake pigment which produces an excellent metallic effect and a high brightness to a coating. The coating of the present invention is capable of covering a substrate with metallic flakes, for example alumina flakes, with no need of repeated coatings. Accordingly, according to the present invention, the content of the flake pigment in the coating material in the content of the flake pigment in the applied coating are required to be as close to each other as possible, that is, the introduction ratio is required to be as close as possible to 100%. Thus, if the charge value of the flake pigment is made coincident with that of the resin powder by coating base particulars such as alumina flakes with a specific film, the introduction ratio can approximate 100% .

The Examiner argues that both the present application and the Hulin disclosure are directed to a carrier, a resin and a charge control agent and that the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. Furthermore, the Examiner argues that although the Hulin reference is silent with respect to the charged value relationship as defined by the present invention, since the charge value relationship is determined by the composition and the charged value of the resin and the charged value agent themselves, which is a property of the resin and the charged value agent, the claimed value difference would be inherent to the Hulin reference.

As previously pointed out to the Examiner, the flake pigment of the present invention and the universal carrier of the Hulin reference belong to completely technical fields with completely

different applications. In addition thereto, their respective structures are totally different from each other as can be seen by referring to Figures A and B attached hereto. As shown in Figure A, in the flake pigment of the present application as defined in claim 1, a base particle has its surface coated by a film containing a charge control agent. That is, the film is present on substantially the entire surface of the base particle. In contrast thereto, as shown in Figure B, in the universal carrier of the Hulin reference, a carrier preaging component is present on part of the external surface of a carrier base component, that is, contained in a surface depression of the carrier based component (please see in this regard the abstract of the Hulin reference). Thus even if, for sake of argument, the carrier preaging component of the Hulin reference includes a charged controlled agent, the resulting structure is totally different from that of a film containing the charge controlling agent as defined by the present invention. Thus, the flake pigment of the present invention and the universal carrier of the Hulin reference have totally different structures, and as such, would not share the same charged value difference, even if, *arguendo*, the resin, the charged control agent and the flake pigment would happen to be the same.

Furthermore, it should be noted that the present invention is directed to a powder metallic coating material which contains both the flake pigment and the resin powder, when being prepared as coating material and also when forming a coating after being applied. In contrast thereto, the Hulin reference is directed to a universal carrier for a two-component developer for electrophotography wherein the carrier (the carrier base component) disclosed in the Hulin reference is mixed with toner (the carrier preaging component) in printing, and only the toner (the carrier preaging component) is consumed while the carrier (the carrier base component) is repeatedly used. That is, when a printing process is completed when employing the teaching of the Hulin reference, only the toner (the carrier preaging component) exists on the printed matter, whereas the carrier (the carrier base component) does not so exist thereon.

In addition, the present invention is characterized by the fact that the charged value of the flake pigment and the charged value of the resin powder are established to approximate each other by coating the surface of the flake pigment with a specific coating, whereby the content of the flake pigment in the coating material and that in the implied coating are established to be as

close as possible to each other. That is, an introduction ratio defined in the present application is set to be as close as possible to 100% . In contrast thereto, in the Hulin reference, even if, for sake of argument, the carrier preaging component includes a charge control agent, the Hulin reference is silent with respect to the relationship between the charge value of the carrier preaging component that of the carrier base component. This relationship, as clearly shown in Table 2 of the present application strongly affects the coating brightness, the spit formation state and the substrate hiding property of the coating of the present invention. Since the Hulin reference does not disclose or suggest the desirability of establishing the charge value of the flake pigment and that of the resin powder to effect the advantageous results shown in Table 2 of the present application, it is clear that the Hulin reference does not even remotely suggest the Applicant's inventive contribution.

In rejecting claim 15 under 35 U.S.C. § 112, second paragraph, the Examiner argues that the expressions "effective", "high", and "excellent", as recited in claim 15 of the present application are relevant terms which render the claim indefinite. However, since these expressions recited in claim 15 can be readily understood by referring to the specification of the present application, particularly Tables 1 and 2 which can be found on pages 27 and 28 of the present application, it is believed that such expressions can be understood within the contents of the entire application.

Since none of the references relied upon by the Examiner, that is, the Hulin reference, the Hou reference, or the Yoshiki and Shizuo references contemplate the importance of establishing the relationship between the charged value of the flake pigment and the charged value of the resin powder as discussed here-in-above and as recited in the claims of the present application, it is believed that no combination of references can possibly suggest the present invention. Accordingly, in view of the above amendments and remarks reconsideration of the rejection allowance of all the claims of the present application are respectfully requested.

Conclusion

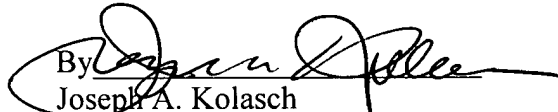
In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch, Reg. No. 22,463 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

Joseph A. Kolasch

Registration No.: 22,463

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road

Suite 100 East

P.O. Box 747

Falls Church, Virginia 22040-0747

(703) 205-8000

Attorney for Applicant

Fig. A



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< The Present Invention >

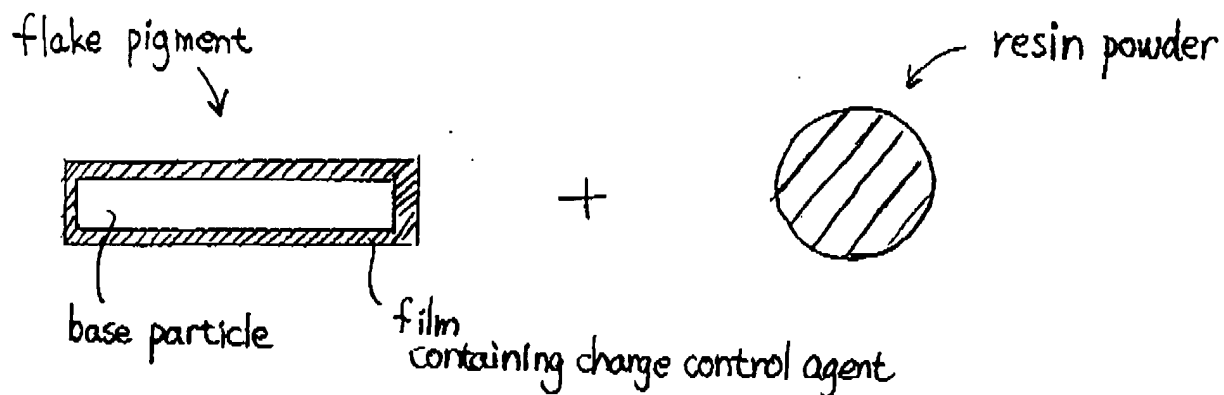


Fig. B

< Hulin et al. >

